

C-3-j. Windward, Orchard Options Worksheet

1	STATE	Hawaii
2	FIELD OFFICE	Lihue, Aiea, Hoolehua, Waimea and Hilo
3	MLRA	
4	COMMON RESOURCE AREA (CRA)	Windward
5	RESOURCE INTERPRETATIONS	<i>see Section II FOTG for interpretations</i>
5.1	SOIL	
5.2	WATER	
5.3	AIR	
5.4	PLANT	
5.5	ANIMAL	
5.6	HUMAN	
6	HYDROLOGIC UNIT	20010000 / 20050000 / 20060000 / 20070000
7	SYSTEM TEMPLATE LABEL	WWA11
8	SYSTEM NAME	Windward, Orchard
9	PLANNING PHASE	Non-Benchmark
10	PLANNING LEVEL	RMS
11	NRCS LANDUSE	CROP
12	PLANNED CONS. PRACTICES	<i>enter code / name of practice</i>
	1. 322	Channel Vegetation
	2. 324	Deep Tillage
	3. 331	Contour Orchard and Other Fruit Area
	4. 340	Cover Crop
	5. 342	Critical Area Planting
	6. 344	Residue Management
	7. 362	Diversion
	8. 380	Windbreak / Shelterbelt Establishment
	9. 386	Field Border
	10. 393	Filter Strip
	11. 412	Grassed Waterway
	12. 466	Land Smoothing
	13. 472	Use Exclusion
	14. 484	Mulching
	15. 560	Access Road
	16. 490	Nutrient Management
	17. 595	Pest Management
	18. 600	Terrace
	19. 638	Water and Sediment Control Basin
13	SYSTEM NARRATIVE	<i>describe how the practices work together as a system</i>
	Orchard crops grown include: Coffee, papaya, bananas, macadamia nuts, and various tropical fruits. The following recommended conservation practices will address resource concerns affected by your orchard operations. Conservation measures will reduce erosion, enhance soil quality, improve water quality, and protect threatened & endangered plants and animals.	

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14	RESOURCE CONCERNS	MAGNITUDE/EFFECTS	IMPACTS
	1. Soil / Erosion / Sheet & Rill Erosion	1. Sheet & rill erosion will be reduced to an acceptable soil loss tolerance level of 5 tons/acre/year or less.	1. Productive topsoil will not erode at an accelerated rate. Soil loss is reduced by ____ tons/acre/year.
	2. Soil / Erosion / Ephemeral Gully	2. Gullies and washouts will occur less frequently with installation of proposed treatment.	2. Clean-up cost after rainfall events will be reduced. Crop losses from washouts will be minimized.
	3. Soil / Erosion / Classic Gully	3. Formation of new gullies will be minimized. Existing gullies will be reshaped and treated.	3. Runoff water will flow at a safe and non-erosive rate. Crop loss from gullying is reduced.
	4. Soil / Erosion / Streambank Erosion	4. Streams will carry runoff water without eroding.	4. Farmable area is not reduced by sloughing of streambanks.
	5. Soil / Condition / Tilth, Crusting, Infiltration, Organic Matter	5. Proposed management techniques will enhance soil tilth.	5. General soil health will improve condition for optimum crop growth.
	6. Soil / Condition / Soil Compaction	6. Plow pans will be broken up to improve water infiltration and allow better root penetration.	6. Growing conditions will improve and crop production will increase.
	7. Soil / Condition / Excess Chemicals in Soil	7. Risk of contamination from pesticides is evaluated.	7. Pesticides are properly applied to prevent degradation of water resources.
	8. Soil / Condition / Other (Chemistry)	8. Management practices will alter soil pH.	8. Favorable soil pH will increase crop yields.
	9. Water / Quantity / Runoff/Flooding	9. Water is managed to properly discharge runoff.	9. Cost of crop and property damage will be reduced.
	10. Water / Quantity / Irrigation Water Management	10. Designed irrigation system will efficiently distribute water to crops.	10. Water is conserved and crop production will increase.
	11. Water / Quality / Pesticides in Groundwater	11. A pest management plan will assess the risk of further groundwater contamination.	11. Pesticides will be properly applied to the land according to soil and plant tissue analysis.
	12. Water / Quality / Nutrients & Organics in Surface Water	12. Potential for contamination from nutrients will be evaluated.	12. Nutrients are properly applied according to soil and plant tissue analysis.
	13. Water / Quality / Suspended Sediment & Turbidity in Surface Water	13. Amount of sediment in runoff water is minimized.	13. Effects from suspended sediment and turbidity to aquatic habitat, recreation waters, and other downstream waterbodies are minimized.
	14. Plant / Condition / Plant Productivity	14. NOT APPLICABLE	14. NOT APPLICABLE

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14	RESOURCE CONCERNS	MAGNITUDE/EFFECTS	IMPACTS
	15. Plant / Management / Threatened & Endangered Plants	15. Area around the threatened or endangered plants will be left untouched.	15. Threatened or endangered plants will have a suitable growth environment undisturbed by agricultural activities.
	16. Animal / Habitat / Domestic Animal Water Requirements	16. NOT APPLICABLE.	16. NOT APPLICABLE.
	17. Animal / Habitat / Threatened & Endangered Species	17. Food, water, and shelter of threatened or endangered species will not be affected by agricultural activities.	17. Threatened or endangered animals will have a suitable habitat for growth and reproduction.

CRA	SYSTEM TEMPLATE LABEL		
15	* QUALITY CRITERIA DOCUMENTATION <i>list resource concerns then indicate yes/no (X)</i>		
	1. Sheet & Rill Erosion	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	2. Ephemeral Gully	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	3. Classic Gully	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	4. Streambank Erosion	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	5. Tilth, Crusting, Infiltration, Organic Matter	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	6. Soil Compaction	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	7. Excess Chemicals in Soil	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	8. Soil Condition - Other (Chemistry)	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	9. Runoff/Flooding	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	10. Irrigation Water Management	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	11. Pesticides in Groundwater	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	12. Nutrients & Organics in Surface Water	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	13. Suspended Sediment & Turbidity in Surface Water	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	14. Plant Productivity	<input type="checkbox"/> YES	<input type="checkbox"/> NO
	15. Threatened & Endangered Plants	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	16. Domestic Animal Water Requirements	<input type="checkbox"/> YES	<input type="checkbox"/> NO

* Provides an indication that the resource quality criteria will be met.